



Efficiency and
performance built in

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Intel is driving innovations in multi-core computing architectures through a combination of silicon, architecture, platform and software innovations to enable new levels of performance and energy efficiency.

The Dual-Core Intel® Xeon® processor LV/ULV is the right choice for high density/HPC environments, where performance per watt is a critical requirement. At 31 watts, the Dual-Core Intel® Xeon® processor LV 2.0 GHz is the most energy efficient server processor for the Intel® E7520-based platforms which supports up to 16GB of DDR2-400 memory using 36-bit addressing.

Intel believes our customers need the facts to determine the right technology and products for their solutions. We have done the comparison of our Dual-Core processors against the competition. See for yourself why the Intel® Xeon® processor anchors an efficient computing platform that drives business growth.

Get the Facts-Straight About the Dual-Core Intel® Xeon® processor LV/ULV

**Intel makes
the most efficient
processors.**

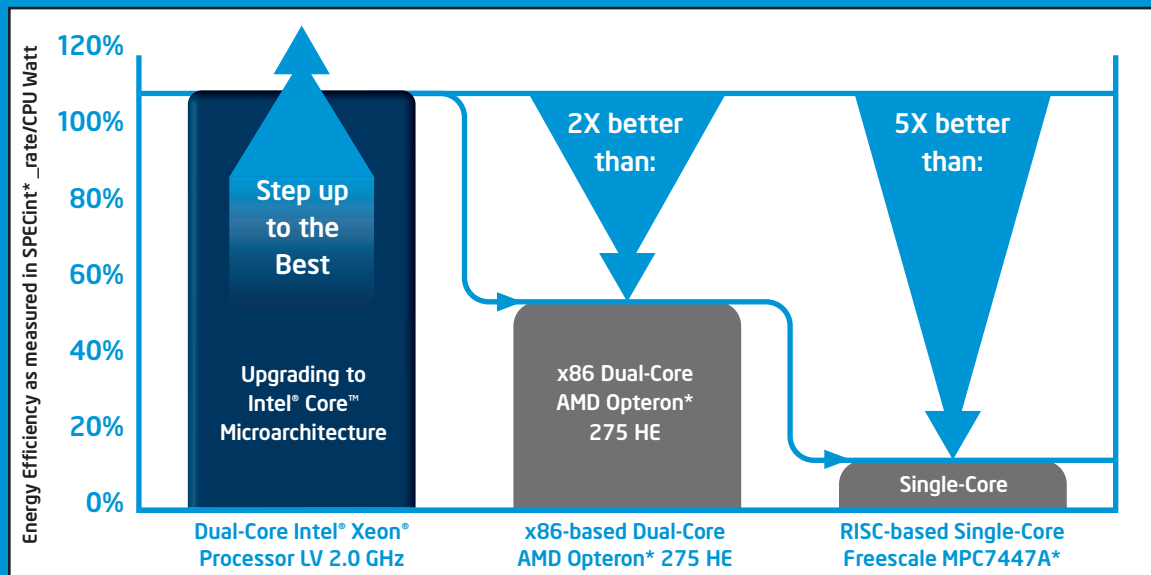
FACT: 3X more
efficient than the lowest
powered dual-core
AMD Opteron* chip.

*That's Impressive
Efficiency.*

FACT: Consumes 1/2 the
power of the MPC7447A*
from Freescale and provides
5X the performance.

*That's Affordable
Performance.*

Energy Efficiency Leadership from Intel®



Dual-Core Intel® Xeon® processor LV/ULV vs. Single-Core Freescale MPC7447A*

CPU	Single-Core Freescale MPC7447A*	Dual-Core Intel® Xeon® Processor ULV 1.66 GHz	Dual-Core Intel® Xeon® Processor LV 2.0 GHz
Cores Total	1	2	
Freq. (GHz)	1.42 ¹	1.66	2.00
Process	130nm ¹	65nm	
Released	2004 ²	2006	
SPECint*_rate	6.0 ³	30.3 ⁴ = 5X the performance	35.2 ⁵ = 6X the performance
TDP (W)	30 ¹	15 (~1/2x)	31
SPECint*_rate/W	Baseline	10.1x the efficiency	5.7x the efficiency
MSRP	\$245 ²	\$345	\$395
Perf./W/\$	Baseline	7.2x the value	3.5x the value

Intel provides 5X the performance at 1/2 the wattage against the nearest competitor

Dual-Core Intel® Xeon® processor LV/ULV vs. x86-based Dual-Core AMD Opteron* 275 HE

CPU	Dual-Core AMD Opteron* 275 HE	Dual-Core Intel® Xeon® Processor ULV 1.66 GHz	Dual-Core Intel® Xeon® Processor LV 2.0 GHz
Freq. (GHz)	2.20 ⁶	1.66	2.00
Process	90nm ⁶	65nm	
SPECint*_rate	33.5 ⁸	30.3 ⁴	35.2 ⁵
TDP (W)	55 ⁶	15 = 1/4 the power	31 = 2/3 the power
SPECint*_rate/W	Baseline	3.3x the efficiency	1.9x the efficiency
MSRP	\$1,051 ⁷	\$345 = 1/3 the cost	\$395 = 1/3 the cost
Perf./W/\$	Baseline	10.1x the value	5.0x the value

The competition offers less performance while Intel delivers a more affordable choice utilizing less watts.

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- ¹ Frequency, Process, and TDP from Freescale's "MPC7447A* RISC Microprocessor Hardware Specifications" http://www.freescale.com/files/32bit/doc/data_sheet/MPC7447AEC.pdf
- ² Release date and MSRP from Freescale's Press Release:
http://www.motorola.com/mediacenter/news/detail.jsp?globalObjectId=3861_3238_23
- ³ SPECint*_rate_base2000 for MPC7447A from Apple's website using a shipped version and PowerPC* optimized compiler from IBM: <http://www.apple.com/macmini/>
- ⁴ SPECint*_rate_base2000 (2 copies) for Dual-Core Intel® Xeon® processor ULV 1.66 GHz (2MB L2) based on internally measured results (April 2006) on Allagash Reference Platform with Intel® E7520 chipset, 667MHz FSB, and 4GB DDR2-400 using Linux* RedHat 9.0, Kernel 2.4.20-SMP, Intel Compiler 9.0, SPEC CPU2000.1.2.
- ⁵ SPECint*_rate_base2000 (2 copies) for Dual-Core Intel® Xeon® processor LV 2.0 GHz (2MB L2) based on internally measured results (April 2006) on Allagash Reference Platform with Intel® E7520 chipset, 667MHz FSB, and 4GB DDR2-400 using Linux* RedHat 9.0, Kernel 2.4.20-SMP, Intel Compiler 9.0, SPEC CPU2000.1.2.
- ⁶ Frequency, Process, and TDP from AMD's specifications page: <http://www.amdcompare.com/us-en/opteron/details.aspx?opn=OSK275FAA6CB>
- ⁷ MSRP from AMD's pricing page, May 2006: <http://www.amd.com/pricing>
- ⁸ SPECint*_rate_base2000 (2 copies) for AMD Opteron® 275 HE (2.2 GHz & 2MB L2) based on published results (November 2005) on ProLiant® DL145 G2 with 8GB DDR1 using Windows® Server 2003 Enterprise SP1, Intel C++ Compiler 8.0 Build 20040318Z, Microsoft® Visual Studio® .NET 7.0.9466 (for libraries), MicroQuill Smartheap Library 7.0
<http://www.spec.org/osg/cpu2000/results/res2005q4/cpu2000-20051212-05242.html>

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